

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-3, 5 and 9-11 are pending in this application. No claim amendments are presented, thus, no new matter is added.

In the Office Action, Claims 1, 3 and 10 were rejected under 35 U.S.C. § 102(b) as anticipated by Koo et al. ("Capacity-Optimized Power Allocation Scheme in an Integrated Voice and Data DS-CDMA System," herein Koo); and Claims 2, 5, 9 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Koo in view of Wang et al. (U.S. Pat. 5,933,763, herein Wang).

In response to the rejection of Claims 1, 3 and 10 as anticipated by Koo, Applicants respectfully traverse this rejection, as independent Claims 1, 3 and 10 recite novel features clearly not taught or rendered obvious by the applied references.

Independent Claim 1, for example, recites a transmission power control method in a radio communication system comprising a base station and mobile stations, comprising:

determining that a communication to be transmitted from the base station to the mobile station is either real-time traffic or non-real time traffic based on at least one of a transmission delay, maximum retransmission count and reception error rate corresponding to the communication;

determining a transmission power required for radio communication between the base station and the mobile stations;

setting a transmission power margin level added to the transmission power to a first value if the communication is real-time traffic and a second value if the communication is non-real time traffic, wherein the first value is greater than the second value; and

transmitting the communication from the base station to the mobile station based on the transmission power margin set in the setting.

Independent Claims 3 and 10, while directed to alternative embodiments, recite similar features. Accordingly, the remarks presented below are applicable to each of independent Claims 1, 3 and 10.

Turning to the applied reference, Koo describes a power allocation scheme in an integrated voice and data DS-CDMA system to enhance system capacity. More particularly, Koo describes that his system increases the supportable data traffic load which is limited to satisfy predetermined QoSs of voice users, by allocating transmission power of the data users to be less than the voice users.¹

Koo, however, fails to teach or suggest various features recited in independent Claims 1, 3 and 10.

More particularly, Koo fails to disclose “determining that a communication to be transmitted from the base station to the mobile station is either real-time traffic or non-real time traffic *based on at least one of a transmission delay, maximum retransmission count and reception error rate corresponding to the communication*,” as recited in independent Claim 1.

In rejecting this claimed feature, the Office Action relies on the second and fourth paragraphs of the “Introduction” of Koo. These cited portions of Koo, however, merely describe the importance of guaranteeing a specific QoS level to voice users, which is higher than that for data users, due to the real time nature of voice communications and the ability for data packets to be retransmitted in non-real time communications. Koo, however, fails to disclose how, or if, his method *determines* whether communication to be transmitted from a base station to a mobile station is real-time or non-real-time. Moreover, Koo not only fails to disclose how his method might determine whether a communication is voice or data, but unequivocally fails to disclose that such a determination is performed *based on at least one of a transmission delay, maximum retransmission count and reception error rate corresponding to the communication*,” as recited in independent Claim 1.

¹ Koo, Abstract.

Claim 1 further recites a step of “***determining a transmission power required for radio communication between the base station and the mobile stations.***” In rejecting this claimed feature, the Office Action again cites the “Introduction” of Koo and asserts that this portion of the reference describes “[a]llocating transmission power of the data user to be less than that of voice users.” While Koo does describe that more transmission power is allocated to voice users as opposed to data users, this allocation has no bearing on ***determining a transmission power required for radio communication between the base station and the mobile stations***, as recited in independent Claim 1.

Claim 1 further recites a feature of “setting ***a transmission power margin level added to the transmission power*** to a first value if the communication is real-time traffic and a second value if the communication is non-real time traffic, wherein the first value is greater than the second value.” In other words, an amount of power is added to the determined transmission power required for radio communication based on the determined nature of the communications. As noted in the Office Action, Koo describes that transmission power allocated to data users may be half of that allocated to the voice users, but Koo fails to disclose that the power is allocated by ***adding a transmission power margin*** to an transmission power required for radio communication between the base station and the mobile stations, as claimed. More concretely, Koo describes allocating more power to voice users as compared to data users, but fails to disclose that the power is allocated by adding a power margin level to an already determined transmission power.

Therefore, for at least the reasons discussed above, Applicants respectfully submit that Koo fails to disclose various features recited in each of independent Claims 1, 3 and 10. Accordingly, Applicants respectfully request that the rejection of Claims 1, 3 and 10 under 35 U.S.C. § 102(b) be withdrawn.

The Office Action rejected Claims 2, 5, 9 and 11 under 35 U.S.C. § 103(a) as unpatentable over Koo in view of Wang. In response to this rejection, Applicants respectfully submit that independent Claims 2, 5, 9 and 11 recite novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 2 recites a transmission power control method in a radio communication system comprising a base station and mobile stations, comprising:

determining a transmission power *required to satisfy a predetermined reception error rate required for radio communication between the base station and the mobile stations*; and
 setting a transmission power margin level added to the required transmission power so that the added transmission power margin level increases as the data retransmission count in an uplink or in a downlink increases.

Independent Claims 5, 9 and 11, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 2, 5, 9 and 11.

In rejecting the claimed features directed to “determining a transmission power,” the Office Action relies on the “Introduction” portion of Koo, stating that this cited portion of the reference describes “[a]llocating transmission power of the data user to be less than that of voice users.” However, simply allocating power differently to voice users as compared to data users is not the same as determining a transmission power required to satisfy a predetermined reception error rate required for communications. In other words, Koo describes an uneven allocation of transmission power, but at no point discloses “determining a transmission power *required to satisfy a predetermined reception error rate required for radio communication between the base station and the mobile stations*,” as recited in independent Claim 2.

The Office Action further concedes that Koo fails to disclose “where data retransmission is allowed in radio communication between the base station and the mobile stations and that the added transmission power margin level increases as the data retransmission count in an uplink or downlink increases.” In an attempt to remedy this deficiency, the Office Action relies on Wang and asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at Applicants’ claims. Applicants respectfully traverse this rejection as Wang fails to teach or suggest the claimed features for which it is asserted as a secondary reference.

Wang describes a method and associated circuitry for initiating communication between a network station and a user terminal of a radiotelephonic communication system.

Wang, however, fails to teach or suggest “***setting a transmission power margin level added to the required transmission power*** so that the added transmission power margin level increases as the data retransmission count in an uplink or in a downlink increases,” as recited in independent Claim 2.

In rejecting this claimed feature, the Office Action relies on col. 4, ll. 46-57 of Wang stating noting that this portion of the reference describes that “[i]f reception of the paging signal is not acknowledged, the paging signal is retransmitted at an increased power level.” Thus, Wang describes that a power level of a paging signal is increased in the case that retransmission of the signal is necessary, but fails to mention the existence of a ***transmission power margin level***, whatsoever. Thus, Wang describes increasing the transmission power of the paging signal, but fails to teach “***setting a transmission power margin level added to the required transmission power*** so that the added transmission power margin level increases as the data retransmission count in an uplink or in a downlink increases,” as recited in independent Claim 2.

Therefore, Koo and Wang, neither alone, nor in combination, teach or suggest the “determining” and “setting” features recited in each of independent Claims 2, 5, 9 and 11.

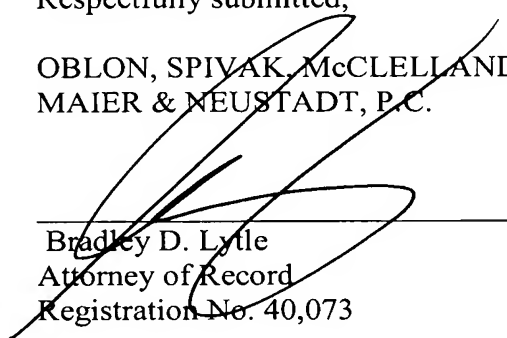
Further independent Claims 5 and 9 recite the additional feature of a “*retransmission count storing means for counting a retransmission count when a same data is retransmitted and storing said retransmission count.*” In rejecting this claimed feature, the Office Action again relies on col. 4, ll. 46-57 of Wang. However, this cited portion of Wang fails to disclose the existence of a means for storing a retransmission count, as claimed.

Accordingly, for at least the reasons discussed above, Applicants respectfully request that the rejection of Claims 2, 5, 9 and 11 under 35 U.S.C. §103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-3, 5 and 9-11, is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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